

DESERT

PLANT LIFE

PACHYCEREUS ORCUTTII---AGAIN

George Lindsay

DEPARTMENT OF IMPORTANT DISCOVERIES

READING AND REFERENCE THE CACTI OF ARIZONA

Reid Moran

(REVIEW)

October, 1950

Desert Plant Life Magazine

Official Publication AMERICAN SUCCULENT SOCIETIES

Chicago, Long Beach, Los Angeles

The oldest magazine in the English language devoted to the study of
cacti and other succulents.

OCTOBER, 1950

VOLUME 22

NUMBER 8

WHOLE NUMBER 181

DESERT. Published monthly except July and August by the Desert Magazine Publishing Company, 866 South Grand Avenue, Pasadena 2, California. Entered as second-class matter October 14, 1930, at the Post Office at Pasadena, California, under the act of March 3, 1879. Yearly subscription price \$1.50. In California 5 cents tax additional. Foreign countries, including Canada and Mexico, \$2.00. Single copies 25 cents.

Address all communications to Box 68, Pasadena, California

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Required by Act of Congress of August 24, 1912.**

OF DESERT PLANT LIFE, published monthly, except July and August, at Pasadena, California, for October 1, 1950.

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GEORGE LINDSAY
Stanford, California

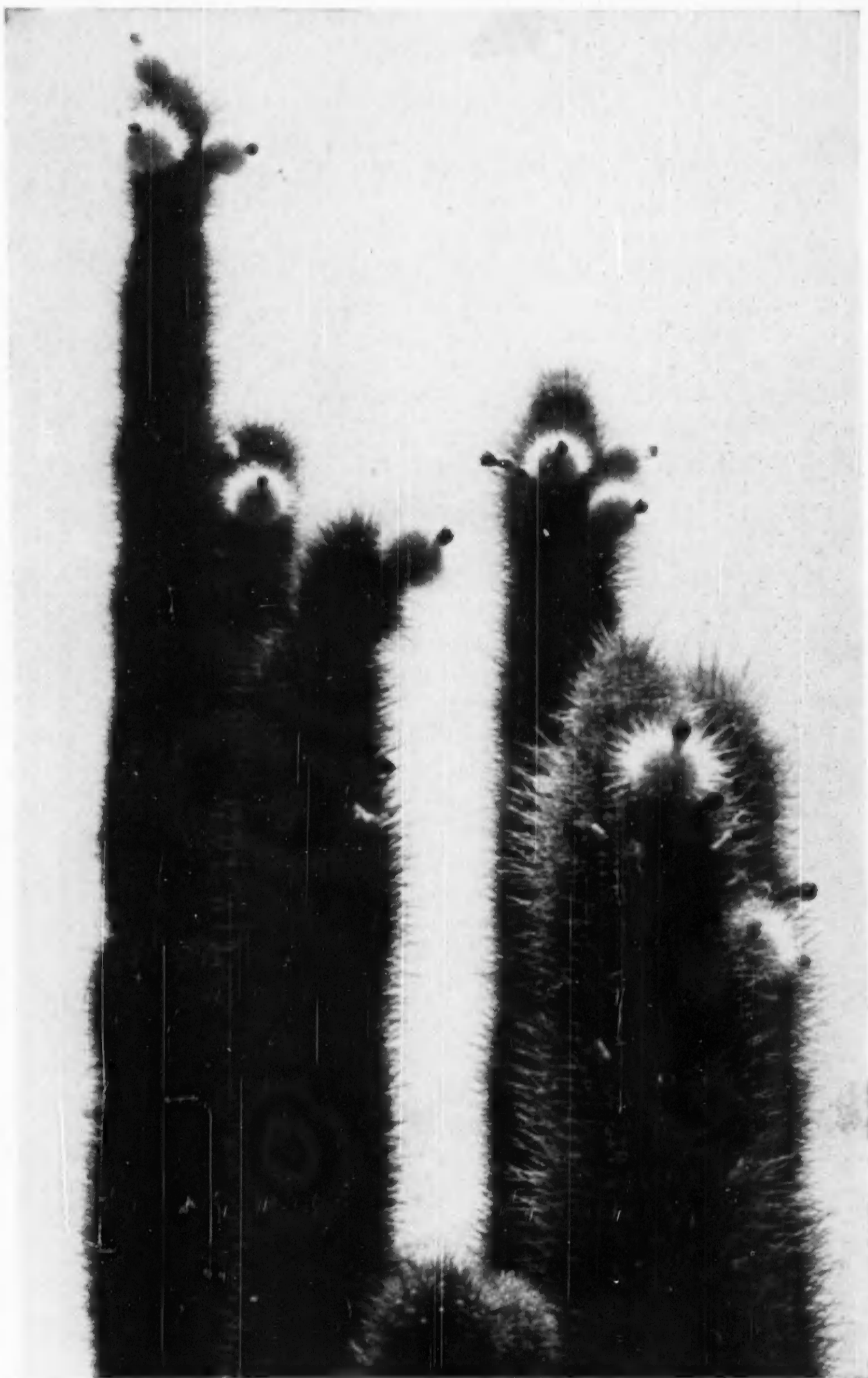
PACHYCEREUS ORCUTTII—AGAIN

As was announced in a recent number of *Desert Plant Life*, *Pachycereus Orcuttii* has been rediscovered after having been "lost" for sixty-four years! Charles Harbison, entomologist with the San Diego Museum of Natural History, had finally traced the plant down with the help of Sra. Espinoza of El Rosario, Baja California. This was a job well done. Mr. Harbison has been actively looking for the rare cactus for over fifteen years, tracing every thread of evidence within the U.S. herbaria and making a number of field trips into Lower California.

In October, 1942, I had an article in *Desert Plant Life* about *Pachycereus Orcuttii*, in which I reviewed the field work which had been done in trying to locate the plant up to that time. This summer I again visited the Rosario region for the purpose of locating additional plants of the species, besides the two found this spring by Mr. Harbison, in order to learn something of its distribution. I found no additional plants, but did photograph the specimens found by Harbison—and strangely, while following a lead to what we presumed to be another plant of *P. Orcuttii*, we found a new and altogether different *Cereus*!

Let us very briefly review the history of *P. Orcuttii*. In May, 1886, an eccentric San Diego plantsman, C. R. Orcutt, was engaged in a botanical exploration trip into the northern district of Lower California. While between El Rosario and San Fernando his guide brought him a cutting of a plant "off the trail some little distance." Orcutt brought the plant back to San Diego, where it grew well, for when Mrs. Brandegee described it in June, 1900 the plant was two meters tall and had flowered. Dr. Rose saw the plant in 1908, and at that time obtained a flower and bud, which material is still on deposit at the National Herbarium. Sometime during this period Mr. Orcutt had himself photographed with the plant, which had developed two robust branches, and distributed the prints as advertisements for his book *American Plants*. The original photographs are in the collection of the San Diego Museum of Natural History, and were reproduced with my previous article about *Pachycereus Orcuttii* in *Desert Plant Life*. In the early 1930's interest in Lower California cacti became very strong, and Howard E. Gates spent many months exploring the peninsula. Mr. Gates discovered many new cactus species, but was unable to locate the "lost *Orcuttii*." Mr. Harbison was actively looking for the plant before 1940. I remember with some discomfort the saddle blisters I acquired riding over the mountains in the vain search. No *Pachycereus Orcuttii*!

During Christmas vacation of 1949 Mr. Harbison again went to Rosario. This time he left copies of the aforementioned photos of Orcutt and his cactus with Sra. Heraclio Espinoza. Sra. Espinoza has a store in the



Tips of the larger branches of *P. Orcuttii* bore light golden fruit.

village of Rosario, and as the "old timers" came in she asked them if they knew of any plants looking like it. She soon had three leads. She decided to try the first one, a fine old Indian, Sr. Salomé Asevedo, who remembered a "pitahia" he had seen while hunting many years before. Sra. Espinoza equipped him with jerked meat and beans, and within a few days he was back with two cuttings of the plant! These were sent to Tijuana, where Mr. Harbison picked them up. They fitted the description of *P. Orcuttii*!

Mr. Harbison was engaged in graduate study at the time, and his first opportunity to return to Rosario came in early April, during Spring Vacation. At that time he visited the plant found by Sr. Asevedo, and was the first American to see the plant growing wild. There were two plants of *P. Orcuttii* growing within a few yards of each other, but additional search by the Harbison party in all directions failed to locate additional specimens. Herbarium material was gathered from dead branches and three cuttings of living material were collected.

Last summer I decided to again take up the search for *P. Orcuttii*, hoping to locate additional specimens in order to learn more of the distribution of the species. Mr. Harbison told me of the areas he had searched, and gave me hints from his experience. Accompanied by John Sloan of Lakeside, I drove to Rosario, where we were the guests of the Espinoza family, who are personal friends of long standing.

Sra. Espinoza told me that many years before her father-in-law, Santiago Espinoza, had noticed a "pitahia" in an arroyo about eighteen miles inland from Rosario. Taking a guide from Rosario John and I drove inland and hiked through the area of "arroyo pitahia", but were unable to locate the plant seen by Don Santiago. It was interesting country, however, covered weird plants found farther south down the peninsula. Giant "cardons", *Pachycereus Pringlei*, and grotesque "cirios", *Idria columnaris* were everywhere, rising above the lower "pitahia agria" *Machaerocereus gummosus* and the red barrel cactus, *Ferocactus gracilis*. Golden spined *Bergerocactus Emoryi* was common, as were several *Opuntias*, an *Agave*, and sunken below the surface of the ground we found a number of flat topped *Mammillaria Brandegeei*.

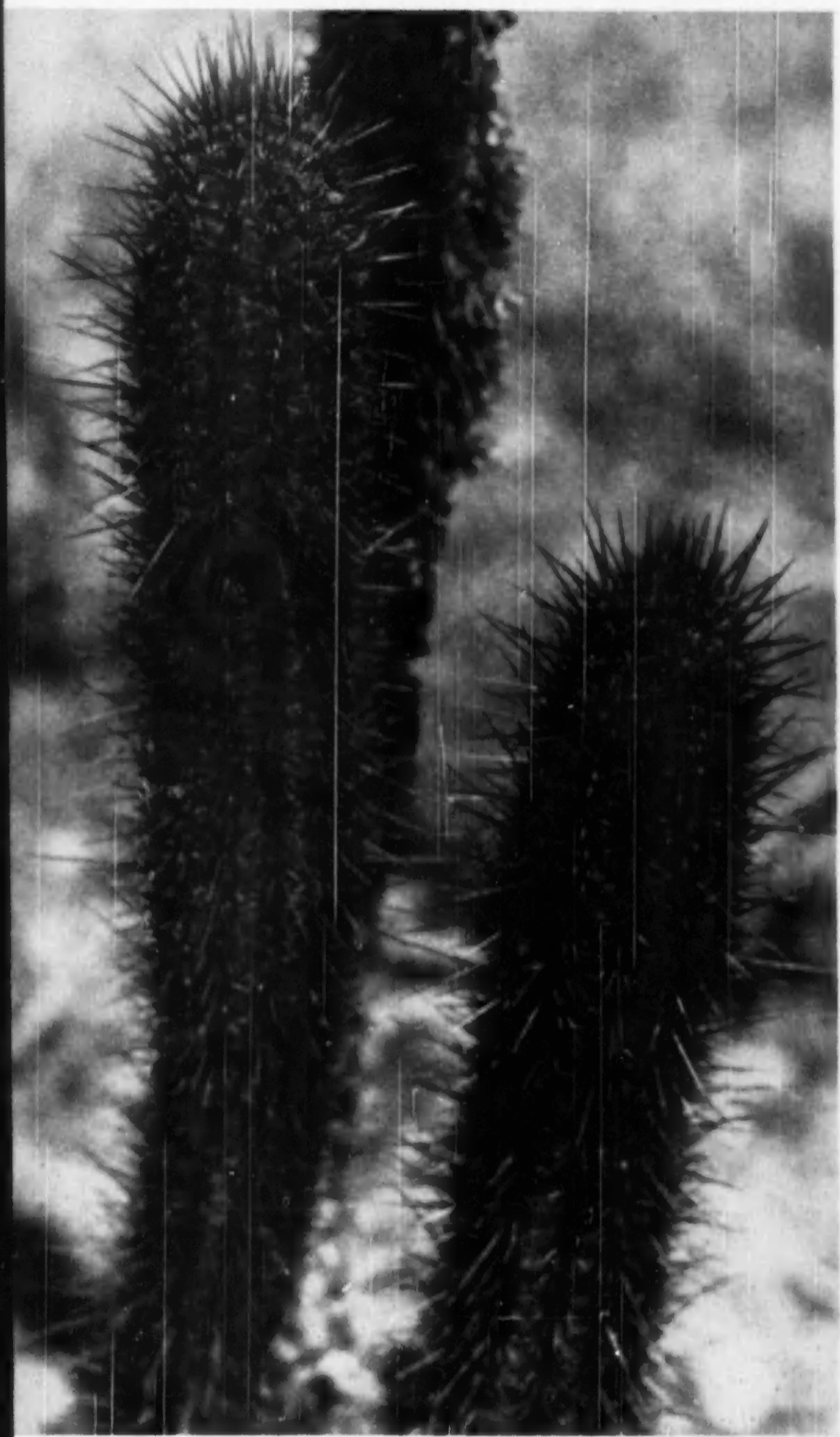
Returning to Rosario very tired and empty-handed, we discussed the remaining "lead" given Mrs. Espinoza by natives of the village. A Sr. Peralta had mentioned seeing a strange "pitahia" with a single stalk higher than his head near a spot called "Datile". The next morning, accompanied by Sr. Peralta and Sr. Espinoza we drove over the rough road to Datile, which was simply a giant plant of *Yucca valida* growing on the beach about 12 miles south of Rosario. Shouldering cameras and guns we followed Sr. Peralta inland, and a mile later were standing by the cactus. It wasn't *P. Orcuttii*, and it wasn't anything else ever seen in Lower California! It is easy to say what the plant isn't, but as yet we can't say what it is — even to the genus!

An amazing thing to me is that Sr. Peralta was able to lead us to the plant, which he had seen but once before, while hunting in 1935. Many of the Mexicans are keen observers, and Sr. Peralta is among them.

As can be seen in the photograph, the new cereus had a single stem about eight feet tall, with a number of branches from the base. The stems were



Pachycereus Orcuttii, with the re-discoverer, Sr. Asevedo standing beside it. This is the larger of the two specimens known. As is the case with *P. pecten-aboriginum*, the fruit of this species is more decorative than the flower.

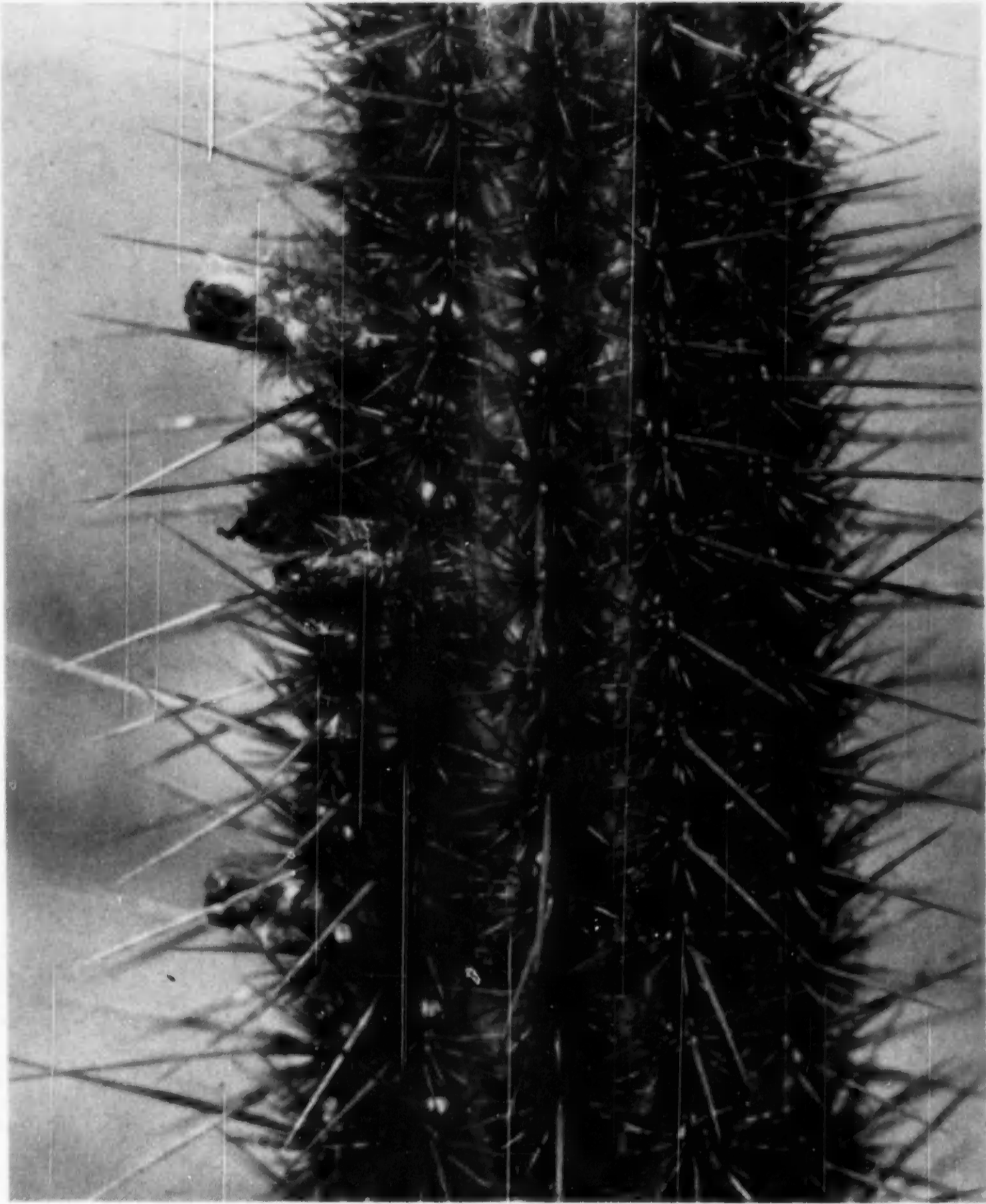


Close up of the branches of the unknown cereus from Datile, near Rosario.

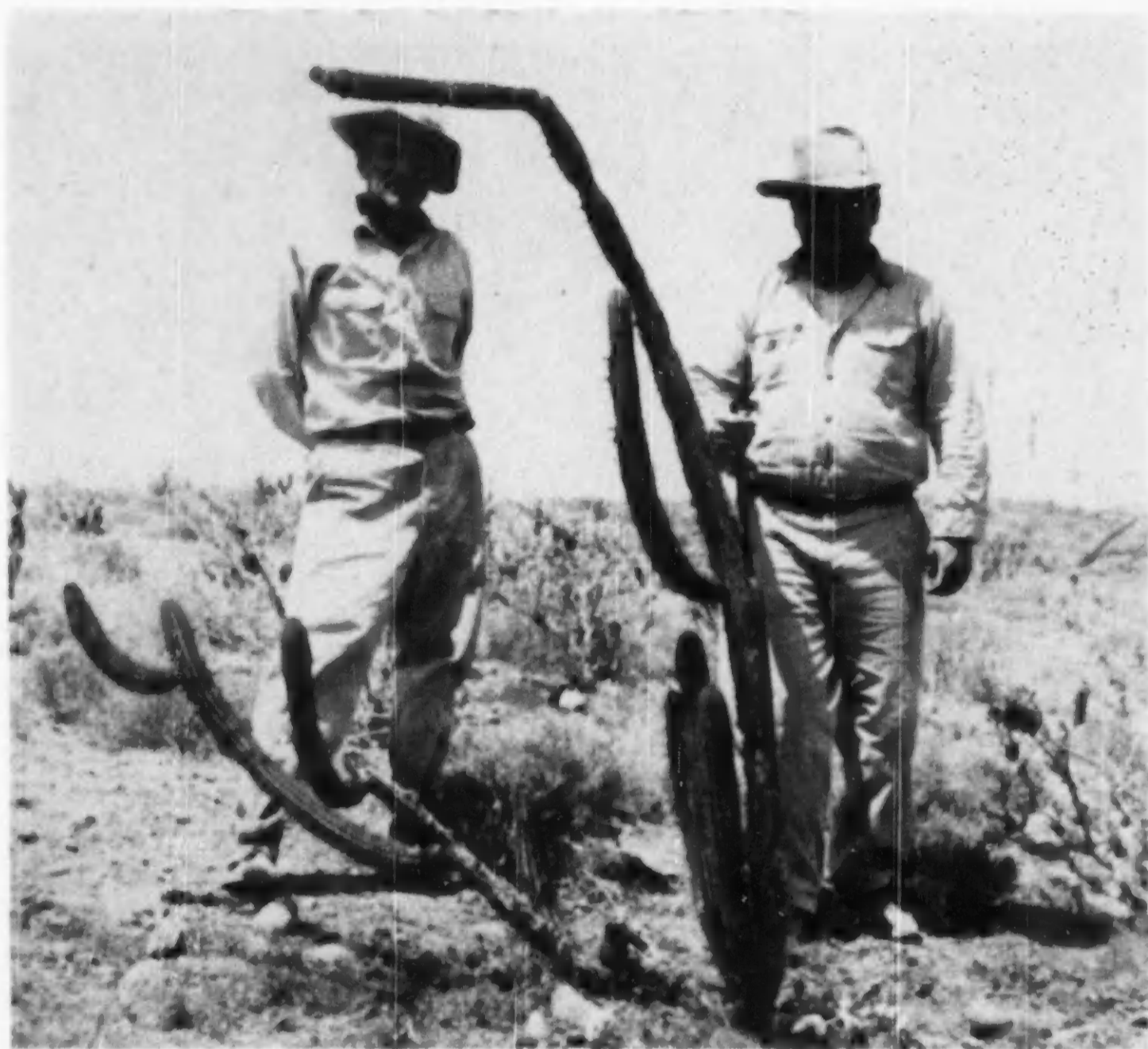
about two inches in diameter, and covered with long needle-like golden spines. The dried flowers remaining on the stem indicated a flower about half the size of the flowers of *Bergerocactus Emoryi*, which was to be found in the immediate vicinity. The new cereus is much heavier and taller than the *Bergerocactus*, has fewer ribs, and different spination. Herbarium material was taken from a dried branch, and two living branches were removed as cuttings. One of these was given to the Desert Botanical Garden in Phoenix, and the other to the Lower California Botanical Garden of Howard E. Gates in Corona. It is hoped they will produce flowers and can be properly described. Of course we were pleased to find the plant, but at the same time it certainly raises new problems.

The following day, guided by Sr. Asevedo, we visited the locality where he had located *P. Orcuttii* for Mr. Harbison. The photographs fail to show the beauty of the plant, which bears many erect branches, several inches in diameter, rising from a short basal trunk. The spines are golden brown, and densely cover the branches all the way to their tips. The larger of the two plants was about eleven feet tall, with eighteen or twenty robust branches, most of the taller of which bore several nearly mature fruit. The fruit were about two inches in diameter, green to pinkish, and covered with a very thick sheathing of needle spines. These were light yellow in color and very attractive. We took a dried branch, some withered flowers and four fruit for herbarium specimens, and regretted the fruit was not mature in order to try to propagate the species from seed. We also took one cutting, which Mr. Gates is raising in his Lower California garden.

We didn't add much to our knowledge of the plant. As yet only two specimens are known, both from the same spot. We were unable to add information to the plant's distribution. No doubt there are others hidden in the hills — there could hardly be only two specimens! As a result of this and previous trips I know a lot of hills they are not on, however! I don't believe that Mr. Orcutt's guide got his cutting off the plants we know, as they certainly would have been "off the trail some little distance." There is much satisfaction in knowing that at least two plants of *Pachycereus Orcuttii* are growing in the wilds, and that the four cuttings which were brought in may later be propagated for our collections. Mrs. Brandegee, in her original description of *P. Orcuttii* said "it is much the finest of the large Cerei of Baja California, being densely covered with bright, yellowish brown spines." I agree that it is a most handsome species.



Withered flowers remaining on the stem of the unknown cereus indicated a flower about half the size of nearby *Bergerocactus Emoryi*.



The unknown cereus found at Datile, near Rosario, while searching for *P. Orcuttii*. Sr. Peralta and Sr. Espinoza, who took us to the plant, give an idea of its size.

DEPARTMENT OF IMPORTANT DISCOVERIES

Division of Those-Made-Too-Late-To-Be-Most-Useful

The Type Specimen of *Pachycereus Orcuttii*

By a curious coincidence, shortly after the rediscovery of *Pachycereus Orcuttii*, the type specimen of that species, which had been missing, turned up in the Herbarium of the University of California. On the type label, the locality of collection is given as halfway between Rosario and San Fernando, Baja California, in a small canyon off the trail on the east side. Mrs. Brandegee and subsequent writers, including Orcutt himself, have given the locality merely as "Rosario" or "near Rosario". This more specific information would have been very useful to those who sought the plant.

R. M.

☆ Reading and Reference ☆

Lyman Benson. *The Cacti of Arizona*. 183 pages, 29 plates (5 in color), 33 figures. University of Arizona Press; distributed by University of New Mexico Press. \$4.00. To be published about October 30, 1950.

Since the publication in 1919 to 1923 of Britton and Rose's well-known monograph of the Cactaceae, the cacti of Arizona have been the subject of several revisions. First was "Arizona Cacti"¹ by Stockwell and Breazeale in 1933. Then came the first edition of Benson's "Cacti of Arizona"² in 1940 and the treatment of the cacti, largely by Peebles, in Kearney and Peebles' "Flowering Plants and Ferns of Arizona"³ in 1942. Now besides Benson's second edition, apparently two other treatments of the cacti of Arizona are in press. Kearney and Peebles' "Arizona Flora", with the treatment of the cacti by Peebles, is due to appear in 1951. And I understand that a book "Arizona Cactuses" by W. Taylor Marshall is to be published about December 1, 1950.

Stockwell and Breazeale followed the nomenclature of Britton and Rose. In his second edition, as in the first, Benson takes an ultraconservative course with regard to genera—a course also taken by Kearney and Peebles. Thus he recognizes only five genera of cacti for Arizona: *Opuntia*, *Cereus*, *Echinocereus*, *Echinocactus*, and *Mammillaria*. The species included would fall into 17 genera in the system of Britton and Rose, plus two genera since proposed. Dr. Benson considers his generic concept very conservative and thinks it possible that an acceptable system recognizing more genera might result from a comprehensive revision of the entire family.

In 1940 Dr. Benson was a comparative newcomer to Arizona. As stated in his introduction, though he made an intensive study in the field and in the herbarium, his first edition was made possible through the aid of three students of Arizona cacti, including Mr. Peebles. His treatment of species was very similar to that of Kearney and Peebles. Since 1940 Dr. Benson has done extensive field work and has published two papers revising the nomenclature of certain groups of cacti. His new edition incorporates these changes and makes others.

Dr. Benson now is quite conservative in his treatment of species as well as of genera. Particularly in *Opuntia* and *Echinocereus*, he finds it expedient to treat as varieties many entities formerly treated as species. However, the total number of entities is increased: for he describes one new species and one new variety, adds eight entities recently proposed by himself and others, and recognizes several entities which in the first edition either were listed as of doubtful status or were entirely omitted. In the second edition he makes no change in the treatment of *Cereus*, but he recognizes

¹ University of Arizona Bulletin 4 (3): 1-116.

² Ibid. 11 (1): 1-134.

³ U. S. Department of Agriculture Miscellaneous Publication No. 423.

26 species and 15 varieties (not including typical varieties) of *Opuntia* as compared to 32 species and 3 varieties in the first edition; 5 species and 12 varieties of *Echinocereus* as compared to 10 species and 1 variety; 14 species and 3 varieties of *Echinocactus* as compared to 14 species; and 11 species and 5 varieties of *Mammillaria* as compared to 11 species. Thus he recognizes 61 species and 35 varieties in the second edition as compared to 72 species and 4 varieties in the first edition. Other species are listed as doubtful and needing further investigation, but their number is much reduced as compared with the first edition. Stockwell and Breazeale included (often in segregate genera) 5 species of *Cereus*, 35 of *Opuntia*, 6 of *Echinocereus*, 12 of *Echinocactus*, and 19 of *Mammillaria*—a total of 77 species.

The arrangement is much as in the first edition. Keys are detailed and workable. The synonymy is not intended to be complete but always includes the name used by Britton and Rose if that differs from the name accepted. Descriptions are full.

Without sacrificing botanical accuracy, Dr. Benson takes pains to simplify the book for the non-botanist. In the introduction he gives a good general background. He discusses the structure of cacti and adds a brief glossary of such necessary botanical terms as are not covered in this discussion. He explains the use of keys and, as an example, traces the saguaro through his key. His excellent discussion of the problems of naming cacti is recommended reading for those who firmly believe that one system of classification (such as that of Britton and Rose) is "right" and all others "wrong". And he briefly discusses the geographical distribution of the cacti. At the end of the book is a general discussion of cultivation of cacti, with particular remarks on each of the Arizona genera.

Dr. Benson omits keys to the varieties, saying that this "saves the reader no end of frustration." It probably saved the writer no end of frustration, but it is doubtful that it will materially reduce the frustration of those who seek to identify plants to variety.

Having seen only galley proofs, I cannot comment on the appearance of the finished book. It will be bound in cloth rather than paper as the first edition. Since many of the photographs and drawings are from the first edition, presumably they will be of the same good quality. Other illustrations are added, and the 60 distribution maps have been redrawn to include the latest information.

The present treatment seems to represent a considerable advance over those that preceded it. It will be most interesting to compare it with the other two works now in press. Perhaps we are approaching a time when the cacti of Arizona will no longer be considered a taxonomists' nightmare.

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